

Abstract

**A Digital Filter For IQ-Generation, Noise Shaping
and Neighbour Channel Suppression**

A polyphase filter of order $x \cdot N$ that is building N allpass filters of order $x \cdot N$ according to the present invention has a structure of an allpass filter of order x comprising delay elements with a delay 1 and at least one multiplier, wherein all delay elements with a delay of 1 are replaced by delay elements with a delay of N and the sampling rate of $f_s' = f_s/N$ with f_s being the sampling rate of the input signal.

Preferably the multiplier included in the structure of the allpass filter of order x comprises N -time multiplex multiplication coefficients that are used in a predetermined order.

(Fig. 1)